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Railo & Jetty Installation

These instructions describe how to create a clean, snappy and complete Railo installation on Jetty, without the need for an additional Web Server such as Apache. Url rewriting is handled by Tuckey urlrewrite filter.

1. Obtain Jetty

Get the **hightide** download for version 7.0.1 (latest stable release) <http://www.webtide.com/resources/downloads.jsp> You will have to register to get the download, but it is free. (The regular Jetty release at eclipse is missing some of the jars needed to make railo work.)

2. Install Jetty

Expand the Jetty archive to any directory.

3. Verify the Jetty Installation

Run `java -jar start.jar OPTIONS=All`. Jetty will issue a number of messages like "...Logging..., ..deploy..., ..extract...", but you shouldn't see any error messages. Verify the installation by browsing to localhost:8080. You should see a "Welcome to Jetty Hightide..." page. This says that java is installed correctly and Jetty is running. Terminate Jetty with **ctrl-c**.

4. Delete unneeded files and directories.

The expanded download contains a number of things that are not needed for a dev or production server. Jetty uses maven but those parts are not necessary to run jetty. It also comes with a number of option jars that the average Railo server will not need.

The following defines what to remove and can be used as a batch file on Windows machines:

```
rmdir /S /Q Assembly
rmdir /S /Q contexts-available
rmdir /S /Q javadoc
rmdir /S /Q resources
rmdir /S /Q META-INF
rmdir /S /Q webapps
```

Jetty comes with a number of test items. Delete everything in the contexts folder including any sub-folders. Leave the contexts folder itself.

```
rmdir /S /Q contexts
mkdir contexts
```

Delete optional items

```
rmdir /S /Q lib\annotations
rmdir /S /Q lib\policy
rmdir /S /Q lib\jta
rmdir /S /Q lib\setuid
rmdir /S /Q lib\slf4j
rmdir /S /Q lib\jdbc
rmdir /S /Q lib\ext
rmdir /S /Q lib\security
rmdir /S /Q lib\jndi
rmdir /S /Q lib\spring
```

Remove jar files. It looks like you're removing everything, but unless you are developing in Java you will never use these deleted parts. If you want to use Apache as the front-end server, keep jetty-ajp-7.0.1.v20091125.jar. (Remember, these instructions result in a fully functioning install without Apache)

```
del /Q lib\jetty-rewrite-7.0.1.v20091125.jar
del /Q lib\jetty-policy-7.0.1.v20091125.jar
del /Q lib\jetty-plus-7.0.1.v20091125.jar
del /Q lib\jetty-jndi-7.0.1.v20091125.jar
del /Q lib\jetty-client-7.0.1.v20091125.jar
del /Q lib\jetty-annotations-7.0.1.v20091125.jar
del /Q lib\jetty-websocket-7.0.1.v20091125.jar
```

Comment out or delete the following line if you will not use Apache

```
del /Q lib\jetty-ajp-7.0.1.v20091125.jar
```

Delete unneeded config files

```
del /Q etc\jetty-jsp.xml
del /Q etc\jetty-spring.xml
del /Q etc\login.properties
del /Q etc\login.conf
del /Q etc\jetty-setuid.xml
del /Q etc\jetty-jaas.xml
del /Q etc\jetty-rewrite.xml
del /Q etc\jetty-logging.xml
del /Q etc\jetty-policy.xml
del /Q etc\jetty-plus.xml
del /Q etc\jetty-xinetd.xml
del /Q etc\jetty-stats.xml
del /Q etc\jetty-ssl.xml
del /Q etc\jetty-proxy.xml
del /Q etc\jetty-fileserver.xml
del /Q etc\jetty-debug.xml
del /Q etc\jetty-bio-ssl.xml
del /Q etc\jetty-bio.xml
del /Q etc\jetty-ajp.xml
del /Q etc\jdbcRealm.properties
```

These config files must remain

```
/etc/jetty.xml
/etc/jetty-jmx.xml
/etc/webdefault.xml
/etc/realm.properties
/etc/keystore
```

5. Obtain Railo

Download the latest Railo jars from <http://www.getrailo.org/index.cfm/download/>

under "Railo Custom The war files and the Railo JAR's can be used for a complete individual installation. All OS"

As of June 2010, the direct links are

```
http://www.getrailo.org/download.cfm?item=/railo/remote/download/3.1.2.001/custom/all/railo-3.1.2.001-jars.zip (Windows)
http://www.getrailo.org/download.cfm?item=/railo/remote/download/3.1.2.001/custom/all/railo-3.1.2.001-jars.tar.gz
```

6. Install Railo

Expand the Railo Jars into a railo folder inside of **{Jetty-Install}/lib/**. So you will end up with a **/lib/railo** folder that contains all of the jars from the railo download. This is a server wide install of Railo which means that any web context that runs on this server will have access to Railo.

7. Obtain Rewrite Filter

Go to <http://tuckey.org/urlrewrite/> and download the urlrewrite filter. As of June 2010 Beta 3.2 works for me.

8. Install the Tuckey Rewrite Filter

Create a folder inside of the `{Jetty-Install}/lib/` folder to contain extra jar files that you may use. Putting it in a separate folder will keep it separate from the standard Jetty install for easier upgrading in the future. For these instructions we'll call that folder `myExtras`. Copy the `urlrewrite*.jar` to the `myExtras` folder.

Now all of the files are in place and we just need to configure everything.

Configuration

9. Edit `{jetty-install}/start.ini`

Change the line

```
OPTIONS=Server,plus,jta,jdbc,annotations,jsp,resources,websocket
```

to

```
OPTIONS=All
```

(The options parameter is case sensitive, that is `OPTIONS=ALL` doesn't work.)

10. Edit `{jetty-install}/etc/jetty.xml`

comment out or delete

```
name="addBean">
    class="org.eclipse.jetty.deploy.WebAppDeployer">
        name="contexts"> id="Contexts"/>
        name="webAppDir"> name="jetty.home" default="."/>/webapps
        name="parentLoaderPriority">false
        name="extract">true
        name="allowDuplicates">false
        name="defaultsDescriptor"> name="jetty.home" default="."/>etc/webdefault.xml
        name="setAttribute">
            org.eclipse.jetty.server.webapp.ContainerIncludeJarPattern
            .*\/jsp-api-[^\/]*\.jar$|.*\/jsp-[^\/]*\.jar$
```

11. change port (see ++ note at bottom)

Change 8080 to 80 so that this line

```
name="port"> name="jetty.port" default="8080"/>
```

Becomes

```
name="port"> name="jetty.port" default="80"/>
```

12. Edit `{jetty-install}/etc/webdefault.xml`

Re-define servlet-mapping

Replace

```
jsp
*.jsp
*.jspxf
*.jspx
*.xsp
*.JSP
*.JSPF
*.JSPX
*.XSP
```

with

```
CFMLServlet
*.cfm
*.cfml
*.cfc
*.cfm/*
*.cfml/*
*.cfc/*
```

Add `welcome-file-list`. paste in these lines

```
index.html
index.htm
index.cfm
index.cfm1
```

Add CFML Servlet. paste these lines

```

<-- <===== -->
<-- <CFML Servlet (railo) -->
<-- <===== -->

CFMLServlet
CFML runtime Engine
railo.loader.servlet.CFMLServlet

    railo-web-directory
    {web-root-directory}/WEB-INF/railo/
    Railo Web Directory directory

    railo-server-root
    lib/railo
    Railo server configuration directory (where server admin root and configuration files will be stored)

```

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13 Search Engine Strategies / URL rewriting

If you need URL rewriting then paste in these lines in at the top of `{jetty-install}/etc/webdefault.xml`

```

<-- <===== -->
<-- <SES Filter -->
<-- <===== -->

UrlRewriteFilter
org.tuckey.web.filters.urlrewrite.UrlRewriteFilter

    logLevel
    WARN

UrlRewriteFilter
/*

```

14. Create context xml (see ++ note at bottom)

For each context, create a file in the `{jetty-install}/contexts` folder, named `MyWebbApp.xml` (file can be named anything but I name mine after the domain), and paste into it:

```

<?xml version="1.0" encoding="ISO-8859-1"?>
<!-- Mort Bay Consulting//DTD Configure//EN "http://jetty.mortbay.org/configure.dtd" -->
<Configure class="org.eclipse.jetty.webapp.WebAppContext" style="color:#2A00FF; ">
<Set name="contextPath" style="color:#2A00FF; ">/</Set>
<Set name="resourceBase" style="color:#2A00FF; ">"C:\MyWebRoot\MyWebApp</Set>
<Set name="welcomeFiles" style="color:#2A00FF; ">
  <Array type="String" style="color:#2A00FF; ">
    index.cfm
    index.cfml
    index.htm
    index.html
  </Array>
</Set>
<Set name="defaultsDescriptor" style="color:#2A00FF; "><SystemProperty name="jetty.home" default="."/>/etc/webdefault.xml</Set>
<Set name="connectorNames" style="color:#2A00FF; ">
  <Array type="String" style="color:#2A00FF; ">
    0.0.0.0:80
  </Array>
</Set>
<Set name="virtualHosts" style="color:#2A00FF; ">
  <Array type="String" style="color:#2A00FF; ">
    MyWebbApp
  </Array>
</Set>

```

where `C:\MyWebRoot\MyWebApp` is the file system location of the web app and `MyWebbApp` is the host name for the app.

15. Create urlrewrite.xml

For the url rewrite stuff to work, both Step 13 and this step are required. Create a directory `"c:\MyWebRoot\MyWebApp\WEB-INF"`. Railo would create this directory when it runs, but we're not quite ready to run it yet. We'll need a file there named `urlrewrite.xml`. Paste this into it:

```

<<?xml version="1.0" encoding="utf-8"?>
<<!DOCTYPE urlrewrite
PUBLIC "-//tuckey.org/DTD UrlRewrite 3.0//EN"
"http://tuckey.org/res/dtds/urlrewrite3.0.dtd">

  ^/some/olddir/(.*)$
  type="redirect">/very/newdir/$1

  match-type="wildcard">
  /blog/archive/**
  type="redirect">/roller/history/$1

```

These rules are examples, you would put whatever redirect rules you actually want in their place.

16. Setup Host file

TCP/IP uses the 'hosts' file to map a domain name to an ip address locally. See http://en.wikipedia.org/wiki/Hosts_file to learn more about it and where it goes on your particular operating system. You'll need a line in the hosts file that looks like:

```
192.168.127.100 MyWebApp
```

where 192.168.127.100 is a local IP address of your machine.

Testing Installation

17. Start Railo

From the {jetty-install} directory, execute this:

```
java -Dcom.sun.management.jmxremote -DSTOP.PORT=8887 -DSTOP.KEY=railo -Xms256M -Xmx512M -Djava.awt.headless=true -jar start.jar etc/jetty-jmx.xml etc/jetty.xml
```

You should see some lines like this:

```
2010-05-31 19:26:57.078:INFO:Logging to StdErrLog::DEBUG=false via org.eclipse.jetty.util.log.StdErrLog
2010-05-31 19:26:57.859:INFO::jetty-7.0.1.v20091125
2010-05-31 19:26:57.953:INFO::Deploy D:\!JettyTest\contexts\projectBoaz.xml -> WebAppContext@1d225a7@1d225a7/,file:/D:/!devWebRoot/Boaz/
railo-server-root:C:\!Jetty\lib\Railo\railo-server
C:\!Jetty\lib\Railo\railo-server\patches\3.1.2.013.rc
Mon May 31 19:26:59 EEST 2010-843 Start CFML Controller
```

```
=====
SERVER CONTEXT
```

```
-----
- config:C:\!Jetty\lib\Railo\railo-server\context
=====
```

```
Mon May 31 19:27:01 EEST 2010-406 using JRE Date Library
Mon May 31 19:27:01 EEST 2010-625 write file:D:\jfreechart-patch.jar
Mon May 31 19:27:01 EEST 2010 Loaded Railo Version 3010213
```

```
=====
WEB CONTEXT
```

```
-----
- config:C:\MyWebRoot\MyWebApp\WEB-INF\railo
- webroot:C:\MyWebRoot\MyWebApp
=====
```

Where c:\!Jetty is the jetty install directory

You should also see several lines like this:

```
Mon May 31 19:27:02 EEST 2010-93 write file:C:\MyWebRoot\MyWebApp\WEB-INF\railo\context\*.*
```

18. Test the finished result

Browse to <http://MyWebApp> and verify that the CFML files are rendered like you'd expect

Notes

++ If you're using port 80 already, you may want to use another port number such as 8080 instead of 80 in step 11 in this line:

```
name="port"> name="jetty.port" default="80"/>
```

and in step 14 in this line:

```
0.0.0.0:80
```

In this case, you would access the MyWebApp site with <http://MyWebApp.8080>

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